

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-14 and 16-39 are currently pending. Claims 1, 21, and 34 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1-4, 7, 10-14, 16-18, and 20-39 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,983,237 to Jain et al. (hereinafter “the ‘237 patent”) in view of Kohonen et al. (“Self-Organization of a Massive Document Collection”), further in view of U.S. Patent Application Publication No. 2002/0138487 to Weiss et al. (hereinafter “the ‘487 application”); and Claims 5, 6, 8, 9, and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over the ‘237 patent, the ‘487 application, and the Kohonen et al. reference, further in view of U.S. Patent No. 5,754,938 to Herz et al. (hereinafter “the ‘938 patent”).

Applicants wish to thank the Examiner for the interview granted Applicants’ representative on January 31, 2008, at which time a proposed amendment to the claims was discussed. At the conclusion of the interview, the Examiner indicated that the proposed amendment might overcome the outstanding rejection of the claims pending the Examiner’s further consideration of the claims upon formal submission of a response to the outstanding Office Action.

Amended Claim 1 is directed to an information retrieval system in which a set of distinct information items mapped to respective nodes in a self-organizing map by mutual similarity of the information items, so that similar information items map to nodes at similar positions in the self-organizing map, wherein the self-organizing map is created by extracting features from the information items and comparing, collectively, all of the features extracted

from the information items, the system comprising: (1) a user control for defining a search criterion for selecting information items; (2) a detector for detecting those positions within the self-organizing map corresponding to the selected information items; (3) a graphical user interface for displaying display points representing those positions within the self-organizing map corresponding to the selected information items; and (4) a processor, responsive to the selected information items defined by the search criterion, for providing one or more representations representative of the information content of the selected information items, wherein the information items include at least image data. Further, Claim 1 has been amended to clarify that the processor is responsive to the selected information items and displays one or more images obtained from the image data included in the selected information items defined by the search criteria so as to indicate the subject matter of the selected information items. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.<sup>1</sup>

Regarding the rejection of Claim 1 under 35 U.S.C. § 103, the Office Action asserts that the '237 patent discloses everything in Claim 1 with the exception of a self-organizing map and the one or more image items that are representative of the information content of the selected information items defined by the search criteria, and relies on the Kohonen reference and '487 application to remedy those deficiencies.

The '237 patent is directed to a visual query processing method including the steps of providing a user query; applying the user query to a visual dictionary that includes a plurality of feature vectors so as to generate a set of query vectors; and applying the query vectors to an image database comprising a plurality of images so as to provide a list of similar images. Further, the '237 patent discloses a set of queries based on descriptors of images to search a database, wherein the descriptors are compared with stored descriptors and are judged to see

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<sup>1</sup> See, e.g., pages 15-17 of the specification.

if they are within a “ballpark” approximation of the feature region.<sup>2</sup> Thus, the ‘237 patent discloses the use of selected, separate, and direct comparisons for different features of an image.

However, as admitted in the outstanding Office Action, the ‘237 patent fails to disclose a self-organizing map, as recited in amended Claim 1.

Moreover, Applicants respectfully submit that the system disclosed by the ‘237 patent operates in a fundamentally different fashion than that of a self-organizing map, and that one of ordinary skill in the art would not have been motivated to combine the teachings of the ‘237 patent with a reference that discloses a self-organizing map. The ‘237 patent discloses that different comparisons with different image descriptors each count as a query and that the results are added together to find the best matches in the database, and that the descriptors can be based on image or on text information. Thus, as discussed in more detail below, the ‘237 patent discloses a system that is in direct contrast to how self-organizing maps operate since self-organizing maps are created by extracting features from the information items and comparing, collectively, all of the features extracted from the information items, as recited in amended Claim 1. In contrast, the ‘237 patent teaches away from the possibility of using a self-organizing map or other neural network.

Further, Applicants respectfully submit that the ‘237 patent fails to disclose that the information items include at least image data, and that the processor is responsive to the selected information items and displays one or more images obtained from the image data included in the selected information items defined by the search criterion so as to indicate the subject matter of the selected information items, as recited in amended Claim 1. In this regard, Applicants note that column 9, lines 25-36 of the ‘237 patent, cited in the outstanding Office Action, merely refers to an image query in which the features that overlap with an

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<sup>2</sup> See Figures 6 and 7 and column 7, lines 10-23 and column 10, lines 45-58 in the ‘237 patent.

example feature vector are identified. Thus, the '237 patent discloses that a list of feature values or a corresponding list of similar images is returned by the system in response to the query. However, the '237 patent does not disclose a processor that provides one or more images obtained from the image data included in the selected information items defined by the search criteria so as to indicate the subject matter of the selected information items, as required by Claim 1.

The Kohonen et al. reference discloses a self-organizing map for organizing a massive document collection using feature vectors comprising a statistical representation of the vocabularies of the documents. However, Applicants respectfully submit that the Kohonen et al. reference fails to disclose that the information items include at least image data, and that the processor is responsive to the selected information items and displays one or more images obtained from the image data included in the selected information items defined by the search criterion so as to indicate the subject matter of the selected information items, as recited in amended Claim 1. Rather, the Kohonen et al. reference discloses the processing of text and the construction of a document vector as a weighted word histogram in the creation of a self-organizing map.

The '487 application is directed to the hierarchical clustering of websites according to common features, and the presentation of labeled continents and countries, the size of which are proportional to the number of websites deemed relevant to the user's search query.<sup>3</sup> As shown in Figure 6, the '487 application discloses that the names of the clusters that contain instances of search words are presented to the user. However, Applicants respectfully submit that the '487 patent fails to disclose information items included at least image data, and a processor that displays one or more images obtained from the image data included in the selected information items obtained by the search criteria, as recited in amended Claim 1.

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<sup>3</sup> See '487 application, paragraphs [0137]-[0139].

Rather, the '487 application discloses that websites may be presented as buildings on a street, wherein the importance of the website is expressed in the height of the building and the width of the building may reveal the amount of content in the website. Further, the '487 application discloses that a display window in a building may represent an existence of a store, and that a private website may be represented as a house, while a website of a business may be represented as an office building. Further, the '487 patent merely discloses a list of words searched rather than information items that included image data, as recited in amended Claim 1. The '487 application does not teach or suggest the display of one or more images obtained from the image data included in the selected information items defined by the search criterion so as to indicate the subject matter of the selected information items, as recited in amended Claim 1.

Thus, no matter how the teachings of the '237 patent, the Kohonen et al. reference, and the '487 application are combined, the combination does not teach or suggest information items that include at least image data, and a processor that displays one or more images obtained from the image data included in the selected information items defined by a search criterion so as to indicate the subject matter of the selected information items, as recited in amended Claim 1. Accordingly, Applicants respectfully submit that amended Claim 1 patentably defines over any proper combination of the '237 patent, the Kohonen et al. reference, and the '487 application.

In the outstanding Office Action, the stated motivation for combining the teachings of the '237 patent and the Kohonen et al. reference is "to be able to map any representative subset of old input data and new input items straight into the most similar models without ... computation of the whole mapping."<sup>4</sup>

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<sup>4</sup> See page 4 of the outstanding Office Action.

Moreover, Applicants note that in the Response to Arguments section on page 22 of the outstanding Office Action, the Office Action states that “additionally, the references (Jain and Kohonen) teach features that are directed to analogous art and they are directed to the same field of endeavor, such as, database management systems, searching, mapping, visual representations, and positions. Therefore, the references are not in contrast with each other. The relationship between the references highly suggests an expectation of success.” However, Applicants respectfully submit that because references are directed to analogous art is not proof that the teachings of those references are combinable. In the present case, Applicants respectfully submit that the ‘237 patent *teaches away* from the use of the self-organizing maps disclosed by Kohonen et al. The ‘237 patent specifically teaches the use of selected, separate, and direct comparisons for different features of the image, which is in direct contrast to how self-organizing maps operate, as they compare, collectively, all of the features extracted form the information items. Applicants note that this feature is recited in Claim 1. Thus, the ‘237 patent teaches away from the possibility of using a self-organizing map, as taught by Kohonen et al.

As discussed above, Applicants respectfully traverse the assertion in the outstanding Office Action that the ‘237 patent and the Kohonen et al. reference are directed to analogous art and that, because both references are directed to database management systems, there would be a high expectation of success, as asserted in the outstanding Office Action. On the contrary, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to combine the teachings of the ‘237 patent and the Kohonen et al. reference because such a combination would lead to a nonsensical system. In such a combined system, the selected, separate, and direct comparisons for different features of an image, as taught by the ‘237 patent, would have to be performed at the same time as the collective comparison of all of the features extracted from the information items, as taught by Kohonen et al.’s self-

organizing maps. Thus, Applicants respectfully submit that one of ordinary skill in the art would have no expectation of success in combining such unrelated and fundamentally different systems.

Applicants note that the outstanding Office Action appears to rebut this argument merely by stating that the references are not in contrast with each other because they are in analogous art. However, as noted above, two references can be in an analogous art, but one reference may teach away from the use of one feature in combination with the teachings of the second reference. Such as the situation here. Thus, Applicants respectfully submit that the teachings of the '237 patent and the Kohonen et al. reference are not combinable just because they might be in an analogous art. The Examiner has not addressed the fact that the '237 system and the Kohonen et al. system are fundamentally different systems that are not combinable.

For the reasons stated above, Applicants respectfully submit that the rejection of Claim 1 is rendered moot by the present amendment to that claim.

Independent Claims 21 and 34 recite the features of the self-organizing map and the step of displaying one or more images obtained from the image data included in the selected information items defined by the search criteria so as to indicate the subject of the selected information items. Accordingly, as discussed above, Applicants respectfully submit that the combined teachings of the '237 patent, the '487 application, and the Kohonen et al. fail to disclose these limitations. Accordingly, Applicants respectfully submit that rejections of Claims 21 and 34 (and all similarly rejected dependent claims) are rendered moot by the present amendment to Claims 21 and 34.

Regarding the rejection of dependent Claims 5, 6, 8, 9, and 19 under 35 U.S.C. § 103, Applicants respectfully submit that the '938 patent fails to remedy the deficiencies of the '237 patent, the '487 application, and the Kohonen et al. reference, as discussed above.

Accordingly, Applicants respectfully submit that the rejections of Claims 5, 6, 8, and 19 are rendered moot by the present amendment to Claim 1.

Thus, it is respectfully submitted that independent Claims 1, 21, and 34 (and all associated dependent claims) patentably define over any proper combination of the '237 patent, the '938 patent, the '487 application, and the Kohonon et al. reference.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

  
\_\_\_\_\_  
Bradley D. Lytle  
Attorney of Record  
Registration No. 40,073

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413-2220  
(OSMMN 03/06)

Kurt M. Berger, Ph.D.  
Registration No. 51,461